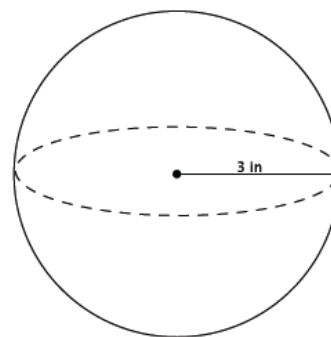
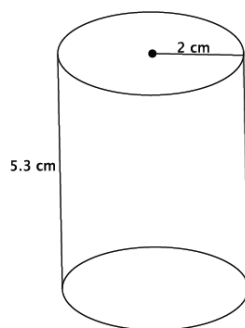
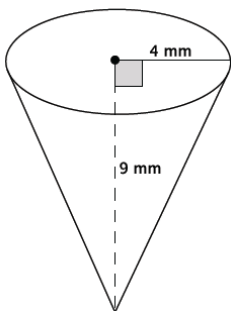


Name \_\_\_\_\_

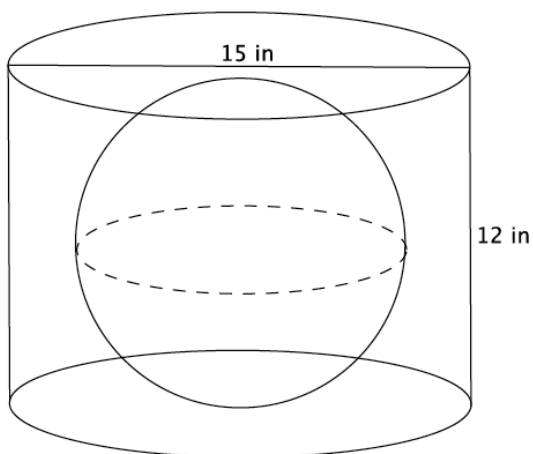
Date \_\_\_\_\_

1. For each part below, leave your answers in terms of  $\pi$ .

a. Determine the volume for each three-dimensional figure shown below.

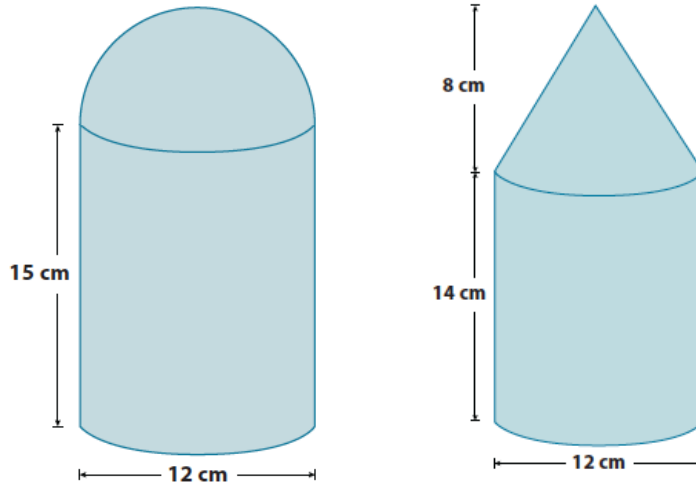


b. You have a cylinder with a diameter of 15 inches and height of 12 inches. What is the volume of the largest sphere that will fit inside of it?

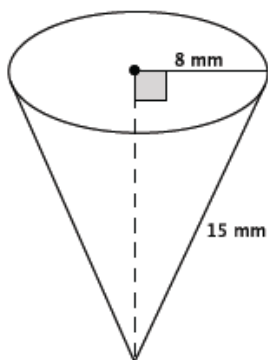


2. Dorothy wants to purchase a container that will hold the most sugar. Assuming each of the containers below can be completely filled with sugar, write a note recommending a container, including justification for your choice.

Note: Figures not drawn to scale.



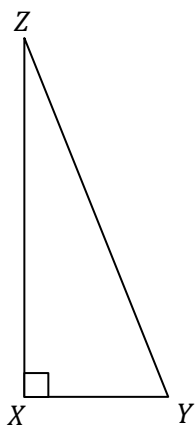
3. a. Determine the volume of the cone shown below. Give an answer in terms of  $\pi$  and an approximate answer rounded to the tenths place.



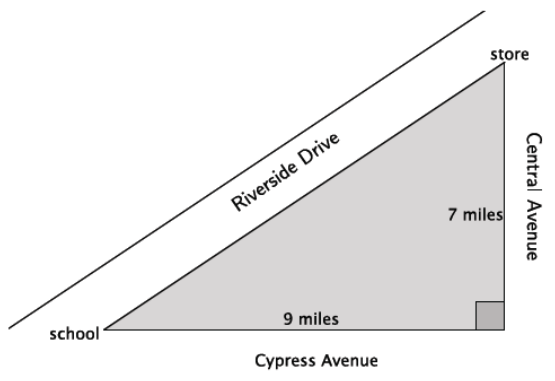
4. a. Is a triangle with side lengths of 7 cm, 24 cm, and 25 cm a right triangle? Explain.

- b. Is a triangle with side lengths of 4 mm, 11 mm, and 15 mm a right triangle? Explain.

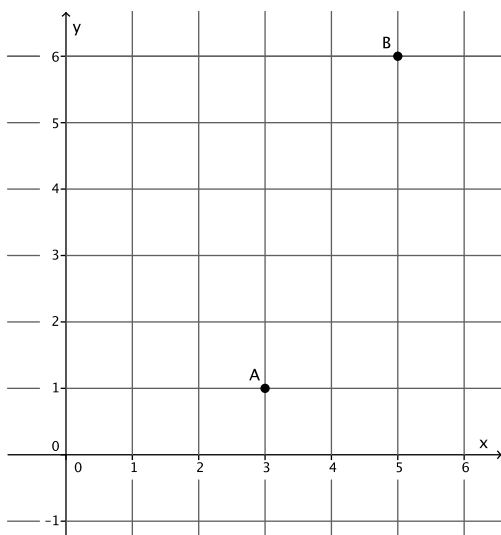
- c. The area of the right triangle shown below is  $30 \text{ ft}^2$ . The segment  $\overline{XY}$  has a length of 5 ft. Find the length of the hypotenuse.



- d. Two paths from school to the store are shown below, one that uses Riverside Drive and another which uses Cypress and Central Avenues. Which path is shorter? By about how much? Explain how you know.



- e. What is the distance between points  $A$  and  $B$ ?



- f. Do the segments connecting the coordinates  $(-1,6)$ ,  $(4,2)$ , and  $(7,6)$  form a right triangle? Show work that leads to your answer.

